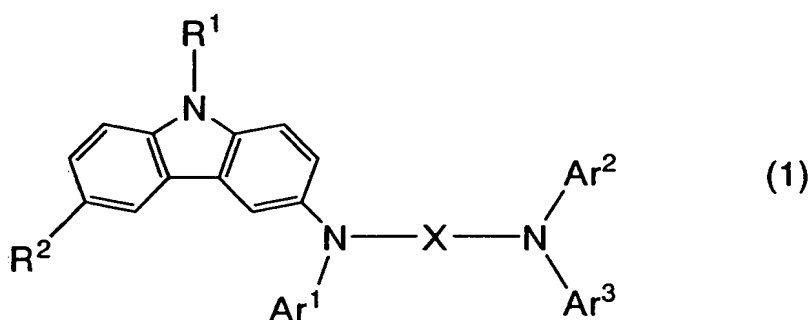


CLAIMS

1. A light emitting element comprising:

a plurality of layers between a pair of electrodes,

5            wherein one of the layers contains a carbazole derivative represented by a general formula (1) and an inorganic compound exhibiting an electron accepting property with respect to the carbazole derivative represented by the general formula (1):

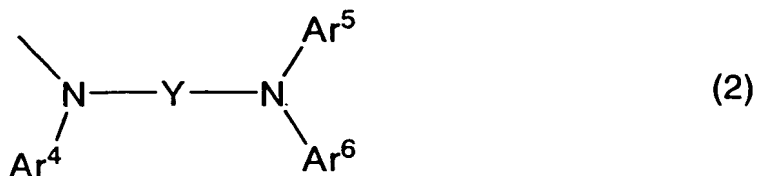


10            wherein R¹ represents any one of hydrogen, an alkyl group having 1 to 6 carbon atoms, an aryl group having 6 to 25 carbon atoms, a heteroaryl group having 5 to 9 carbon atoms, an arylalkyl group and an acyl group having 1 to 7 carbon atoms,

              wherein R² represents any one of hydrogen, an alkyl group having 1 to 6 carbon atoms and a substituent represented by a general formula (2),

15            wherein Ar¹ to Ar⁶ may be identical to or different from one another and independently represent either an aryl group having 6 to 25 carbon atoms or a heteroaryl group having 5 to 9 carbon atoms, and

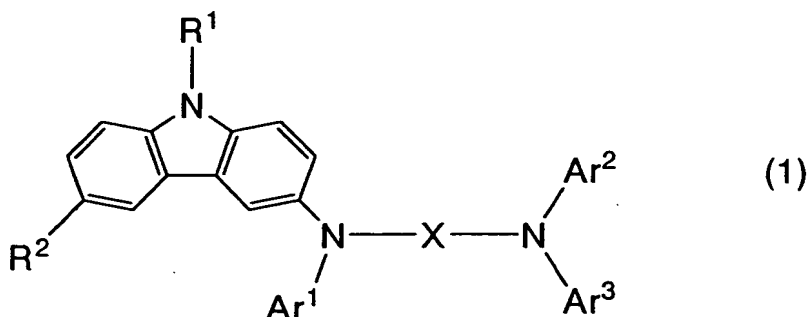
              wherein X and Y may be identical to or different from each other and independently represent either a bivalent aromatic hydrocarbon group having 6 to 25 carbon atoms or a bivalent heterocyclic ring group having 5 to 10 carbon atoms.



2. A light emitting element comprising:

a plurality of layers between a pair of electrodes,

5 wherein one of the layers being in contact with one of the electrodes contains a carbazole derivative represented by a general formula (1) and an inorganic compound exhibiting an electron accepting property with respect to the carbazole derivative represented by the general formula (1):



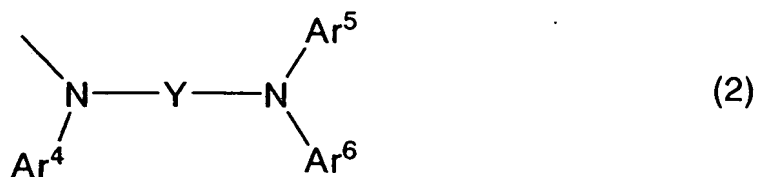
10 wherein  $\text{R}^1$  represents any one of hydrogen, an alkyl group having 1 to 6 carbon atoms, an aryl group having 6 to 25 carbon atoms, a heteroaryl group having 5 to 9 carbon atoms, an arylalkyl group and an acyl group having 1 to 7 carbon atoms,

wherein  $\text{R}^2$  represents any one of hydrogen, an alkyl group having 1 to 6 carbon atoms and a substituent represented by a general formula (2),

15 wherein  $\text{Ar}^1$  to  $\text{Ar}^6$  may be identical to or different from one another and independently represent either an aryl group having 6 to 25 carbon atoms or a heteroaryl group having 5 to 9 carbon atoms, and

wherein X and Y may be identical to or different from each other and independently represent either a bivalent aromatic hydrocarbon group having 6 to 25

**carbon atoms or a bivalent heterocyclic ring group having 5 to 10 carbon atoms.**



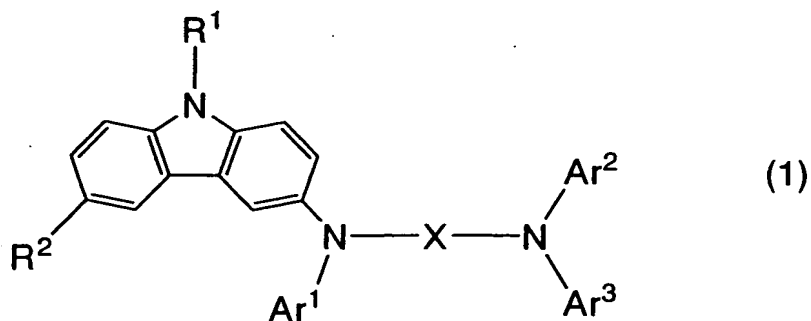
**3. A light emitting element comprising:**

5 a first layer, a second layer on the first layer, a third layer on the second layer and  
a fourth layer on the third layer, between a pair of electrodes,

wherein the second layer contains a light emitting substance,

wherein the third layer contains a material having a donor level that can generate an electron, and

10 wherein each of the first layer and the fourth layer contains a carbazole derivative represented by a general formula (1) and an inorganic compound exhibiting an electron accepting property with respect to the carbazole derivative represented by the general formula (1):

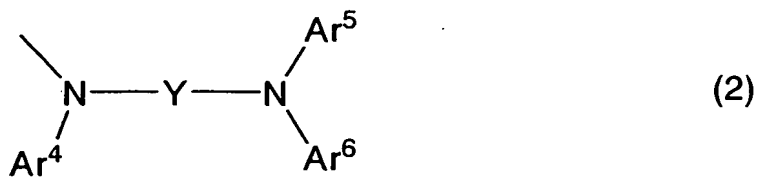


15            wherein R<sup>1</sup> represents any one of hydrogen, an alkyl group having 1 to 6 carbon atoms, an aryl group having 6 to 25 carbon atoms, a heteroaryl group having 5 to 9 carbon atoms, an arylalkyl group and an acyl group having 1 to 7 carbon atoms,

wherein R<sup>2</sup> represents any one of hydrogen, an alkyl group having 1 to 6 carbon atoms and a substituent represented by a general formula (2),

wherein  $\text{Ar}^1$  to  $\text{Ar}^6$  may be identical to or different from one another and independently represent either an aryl group having 6 to 25 carbon atoms or a heteroaryl group having 5 to 9 carbon atoms, and

wherein X and Y may be identical to or different from each other and independently represent either a bivalent aromatic hydrocarbon group having 6 to 25 carbon atoms or a bivalent heterocyclic ring group having 5 to 10 carbon atoms.



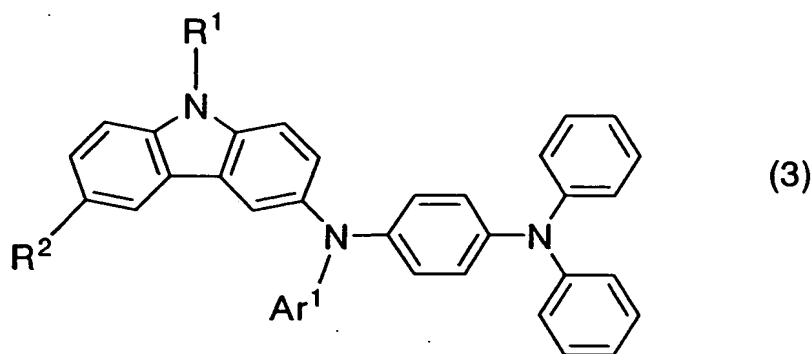
4. The light emitting element according to any one of claim 1 through claim 3, wherein  $\text{R}^1$  is any one of a methyl group, an ethyl group, a tert-butyl group, a phenyl group, a 4-biphenyl group and a 1-naphthyl group.

5. The light emitting element according to any one of claim 1 through claim 3, wherein  $\text{R}^2$  is hydrogen or a tert-butyl group.

6. The light emitting element according to any one of claim 1 through claim 3, wherein  $\text{R}^2$  has a structure of the general formula (2) in which  $\text{Ar}^1$ ,  $\text{Ar}^2$ ,  $\text{Ar}^3$  and X have the same substituents as  $\text{Ar}^4$ ,  $\text{Ar}^5$ ,  $\text{Ar}^6$  and Y, respectively.

7. A light emitting element comprising:  
a plurality of layers between a pair of electrodes,  
wherein one of the layers contains a carbazole derivative represented by a general formula (3) and an inorganic compound exhibiting an electron accepting property

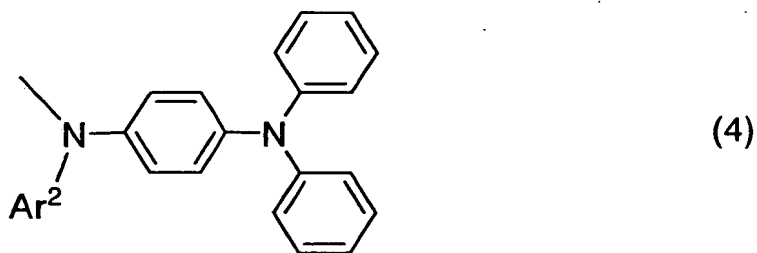
with respect to the carbazole derivative represented by the general formula (3):



wherein  $R^1$  represents any one of hydrogen, an alkyl group having 1 to 6 carbon atoms, an aryl group having 6 to 25 carbon atoms, a heteroaryl group having 5 to 9 carbon atoms, an arylalkyl group and an acyl group having 1 to 7 carbon atoms,

wherein  $R^2$  represents any one of hydrogen, an alkyl group having 1 to 6 carbon atoms and a substituent represented by a general formula (4), and

wherein  $Ar^1$  and  $Ar^2$  may be identical to or different from each other and independently represent either an aryl group having 6 to 25 carbon atoms or a heteroaryl group having 5 to 9 carbon atoms.

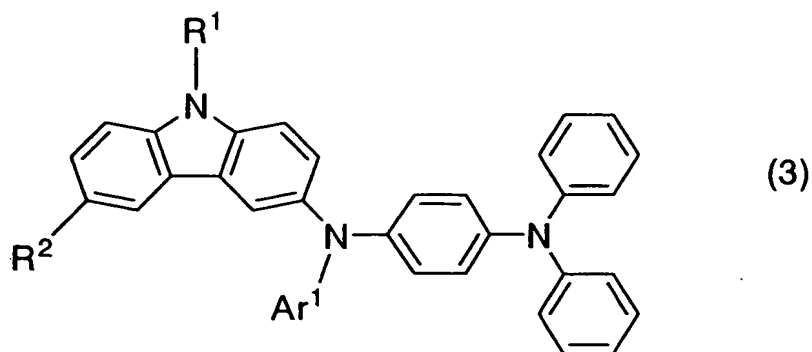


8. A light emitting element comprising:

a plurality of layers between a pair of electrodes,

wherein one of the layers being in contact with one of the electrodes contains a carbazole derivative represented by a general formula (3) and an inorganic compound exhibiting an electron accepting property with respect to the carbazole derivative

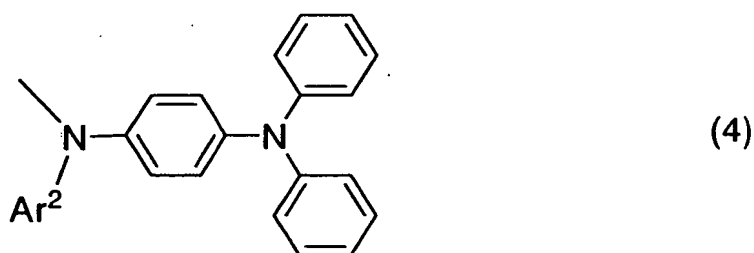
represented by the general formula (3):



wherein  $R^1$  represents any one of hydrogen, an alkyl group having 1 to 6 carbon atoms, an aryl group having 6 to 25 carbon atoms, a heteroaryl group having 5 to 9 carbon atoms, an arylalkyl group and an acyl group having 1 to 7 carbon atoms,

wherein  $R^2$  represents any one of hydrogen, an alkyl group having 1 to 6 carbon atoms and a substituent represented by a general formula (4), and

wherein  $Ar^1$  and  $Ar^2$  may be identical to or different from each other and independently represent either an aryl group having 6 to 25 carbon atoms or a heteroaryl group having 5 to 9 carbon atoms.



9. A light emitting element comprising:

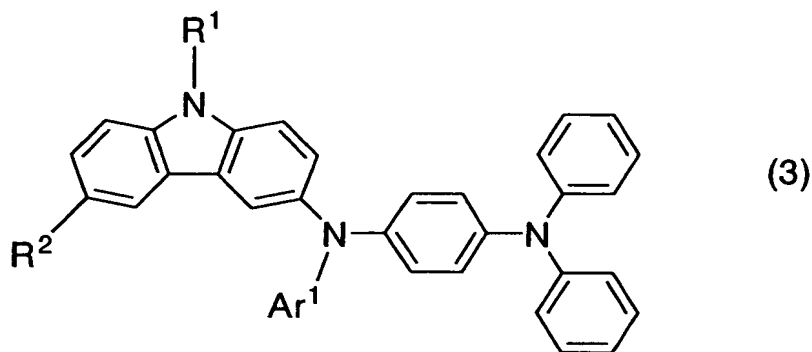
a first layer, a second layer on the first layer, a third layer on the second layer and a fourth layer on the third layer, between a pair of electrodes,

wherein the second layer contains a light emitting substance,

wherein the third layer contains a material having a donor level that can generate

an electron, and

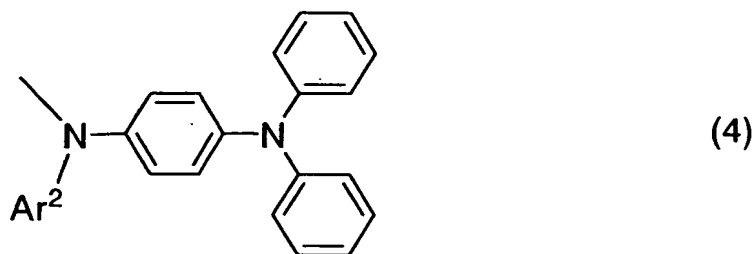
wherein each of the first layer and the fourth layer contains a carbazole derivative represented by a general formula (3) and an inorganic compound exhibiting an electron accepting property with respect to the carbazole derivative represented by the  
 5 general formula (3):



wherein  $R^1$  represents any one of hydrogen, an alkyl group having 1 to 6 carbon atoms, an aryl group having 6 to 25 carbon atoms, a heteroaryl group having 5 to 9 carbon atoms, an arylalkyl group and an acyl group having 1 to 7 carbon atoms,

10 wherein  $R^2$  represents any one of hydrogen, an alkyl group having 1 to 6 carbon atoms and a substituent represented by a general formula (4), and

wherein  $Ar^1$  and  $Ar^2$  may be identical to or different from each other and independently represent either an aryl group having 6 to 25 carbon atoms or a heteroaryl group having 5 to 9 carbon atoms.



15

10. The light emitting element according to any one of claim 7 through claim 9,

wherein  $R^1$  is any one of a methyl group, an ethyl group, a tert-butyl group, a phenyl group, a 4-biphenyl group and a 1-naphthyl group.

11. The light emitting element according to any one of claim 7 through claim 9,  
5 wherein  $R^2$  is either hydrogen or a tert-butyl group.

12. The light emitting element according to any one of claim 7 through claim 9,  
wherein  $R^2$  has a structure of the general formula (4) in which  $Ar^1$  and  $Ar^2$  have the same  
substituent.

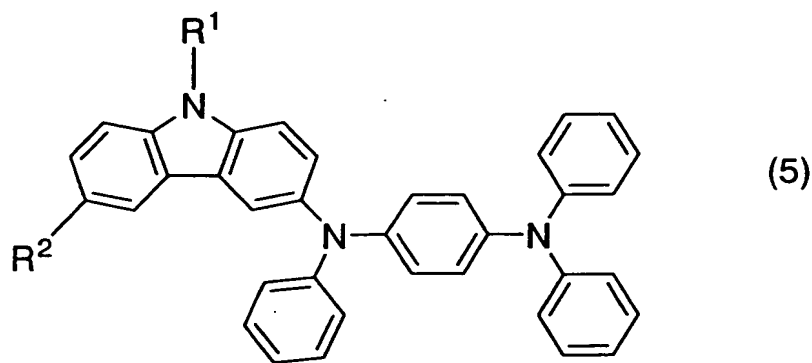
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13. A light emitting element comprising:

a plurality of layers between a pair of electrodes,

wherein one of the layers contains a carbazole derivative represented by a  
general formula (5) and an inorganic compound exhibiting an electron accepting property

15 with respect to the carbazole derivative represented by the general formula (5):

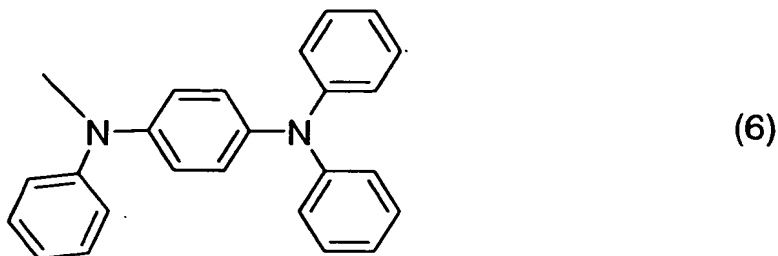


wherein  $R^1$  represents any one of hydrogen, an alkyl group having 1 to 6 carbon atoms, an aryl group having 6 to 25 carbon atoms, a heteroaryl group having 5 to 9 carbon atoms, an arylalkyl group and an acyl group having 1 to 7 carbon atoms, and

20 wherein  $R^2$  represents any one of hydrogen, an alkyl group having 1 to 6 carbon



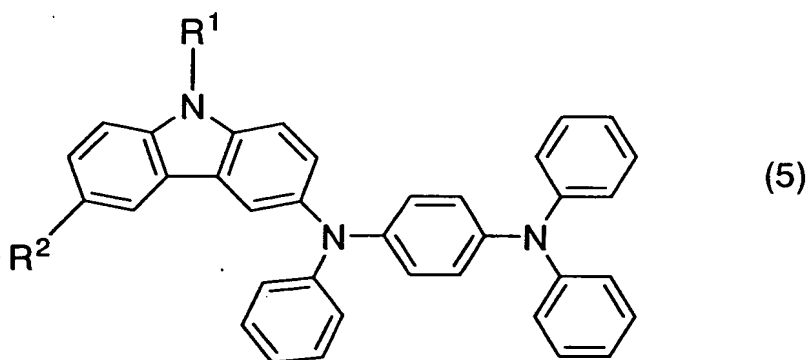
atoms and a substituent represented by a structural formula (6):



14. A light emitting element comprising:

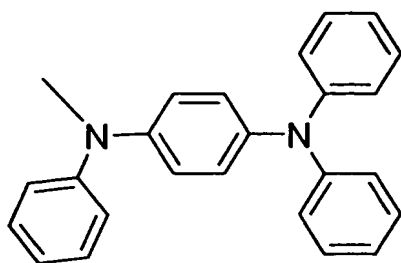
5 a plurality of layers between a pair of electrodes,

wherein one of the layers being in contact with one of the electrodes contains a carbazole derivative represented by a general formula (5) and an inorganic compound exhibiting an electron accepting property with respect to the carbazole derivative represented by the general formula (5):



10 wherein R<sup>1</sup> represents any one of hydrogen, an alkyl group having 1 to 6 carbon atoms, an aryl group having 6 to 25 carbon atoms, a heteroaryl group having 5 to 9 carbon atoms, an arylalkyl group and an acyl group having 1 to 7 carbon atoms, and

15 wherein R<sup>2</sup> represents any one of hydrogen, an alkyl group having 1 to 6 carbon atoms and a substituent represented by a structural formula (6):

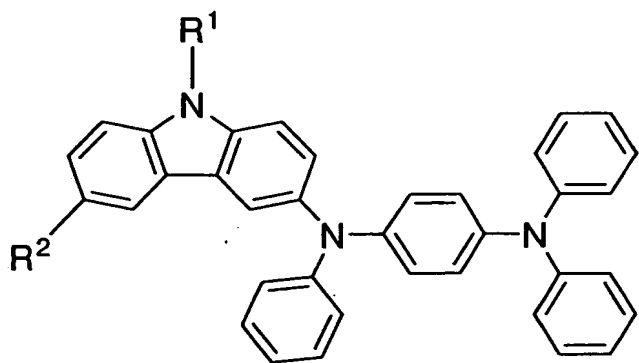


(6)

15. A light emitting element comprising:

- a first layer, a second layer on the first layer, a third layer on the second layer and  
 5 a fourth layer on the third layer, between a pair of electrodes,  
 wherein the second layer contains a light emitting substance,  
 wherein the third layer contains a material having a donor level that can generate  
 an electron, and

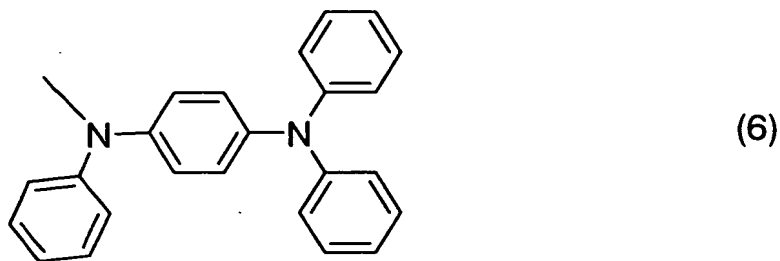
wherein each of the first layer and the fourth layer contains a carbazole  
 10 derivative represented by a general formula (5) and an inorganic compound exhibiting an  
 electron accepting property with respect to the carbazole derivative represented by the  
 general formula (5):



(5)

- wherein  $R^1$  represents any one of hydrogen, an alkyl group having 1 to 6 carbon  
 15 atoms, an aryl group having 6 to 25 carbon atoms, a heteroaryl group having 5 to 9 carbon  
 atoms, an arylalkyl group and an acyl group having 1 to 7 carbon atoms, and  
 wherein  $R^2$  represents any one of hydrogen, an alkyl group having 1 to 6 carbon

atoms and a substituent represented by a structural formula (6):

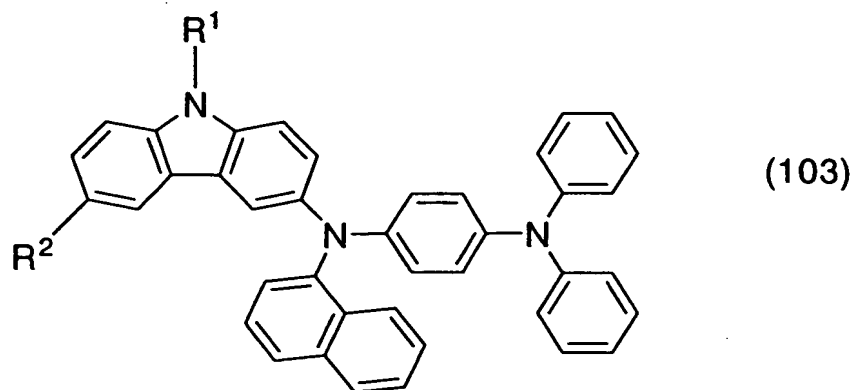


16. The light emitting element according to any one of claim 13 through claim 15, wherein  $R^1$  is any one of a methyl group, an ethyl group, a tert-butyl group, a phenyl group, a 4-biphenyl group and a 1-naphthyl group.

17. The light emitting element according to any one of claim 13 through claim 15, wherein  $R^2$  is hydrogen or a tert-butyl group.

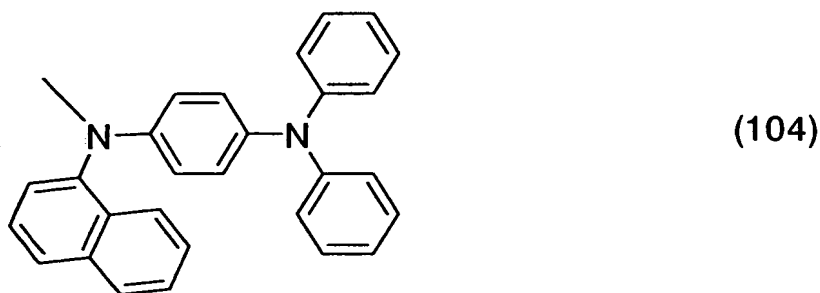
18. The light emitting element according to any one of claim 13 through claim 15, wherein  $R^2$  has a structure of the structural formula (6).

19. A light emitting element comprising:  
a plurality of layers between a pair of electrodes,  
wherein one of the layers contains a carbazole derivative represented by a general formula (103) and an inorganic compound exhibiting an electron accepting property with respect to the carbazole derivative represented by the general formula (103):



wherein  $R^1$  represents any one of hydrogen, an alkyl group having 1 to 6 carbon atoms, an aryl group having 6 to 25 carbon atoms, a heteroaryl group having 5 to 9 carbon atoms, an arylalkyl group and an acyl group having 1 to 7 carbon atoms, and

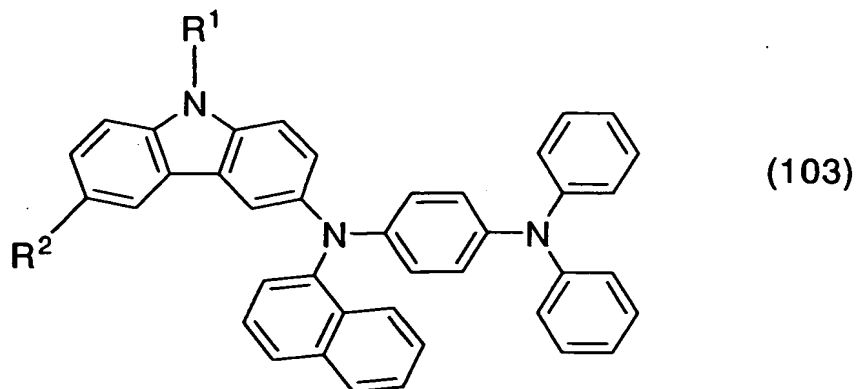
5        wherein  $R^2$  represents any one of hydrogen, an alkyl group having 1 to 6 carbon atoms and a substituent represented by a structural formula (104):



20. A light emitting element comprising:

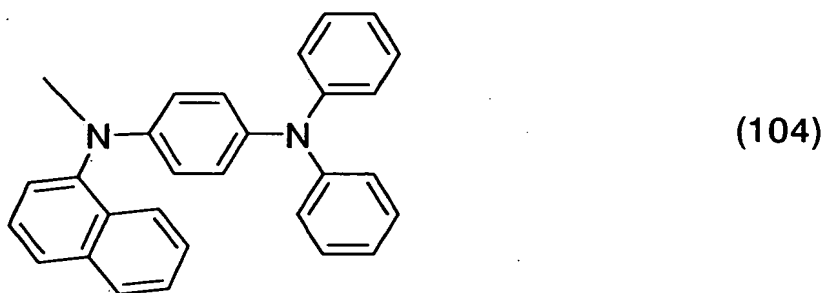
10        a plurality of layers between a pair of electrodes,

wherein one of the layers being in contact with one of the electrodes contains a carbazole derivative represented by a general formula (103) and an inorganic compound exhibiting an electron accepting property with respect to the carbazole derivative represented by the general formula (103):



wherein  $R^1$  represents any one of hydrogen, an alkyl group having 1 to 6 carbon atoms, an aryl group having 6 to 25 carbon atoms, a heteroaryl group having 5 to 9 carbon atoms, an arylalkyl group and an acyl group having 1 to 7 carbon atoms, and

5        wherein  $R^2$  represents any one of hydrogen, an alkyl group having 1 to 6 carbon atoms and a substituent represented by a structural formula (104):



21. A light emitting element comprising:

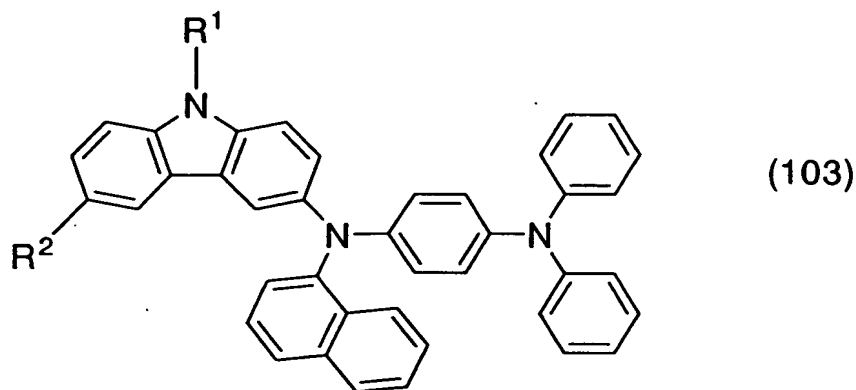
10        a first layer, a second layer on the first layer, a third layer on the second layer and a fourth layer on the third layer, between a pair of electrodes,

wherein the second layer contains a light emitting substance,

wherein the third layer contains a material having a donor level that can generate an electron, and

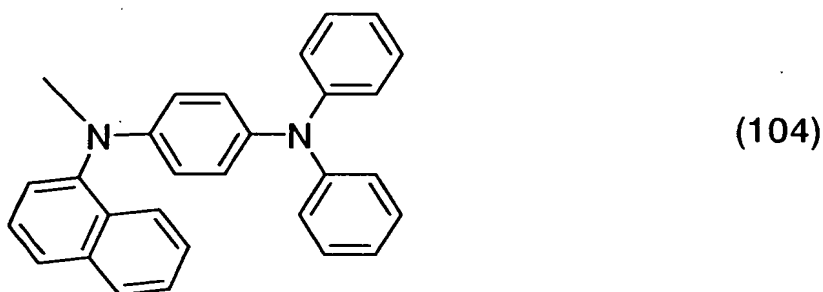
15        wherein each of the first layer and the fourth layer contains a carbazole derivative represented by a general formula (103) and an inorganic compound exhibiting

an electron accepting property with respect to the carbazole derivative represented by the general formula (103):



wherein  $R^1$  represents any one of hydrogen, an alkyl group having 1 to 6 carbon atoms, an aryl group having 6 to 25 carbon atoms, a heteroaryl group having 5 to 9 carbon atoms, an arylalkyl group and an acyl group having 1 to 7 carbon atoms, and

wherein  $R^2$  represents any one of hydrogen, an alkyl group having 1 to 6 carbon atoms and a substituent represented by a structural formula (104):



10

22. The light emitting element according to any one of claim 19 through claim 21, wherein  $R^1$  is any one of a methyl group, an ethyl group, a tert-butyl group, a phenyl group, a 4-biphenyl group and a 1-naphthyl group.

15

23. The light emitting element according to any one of claim 19 through claim 21, wherein  $R^2$  is either hydrogen or a tert-butyl group.

24. The light emitting element according to any one of claim 19 through claim 21, wherein  $R^2$  has a structure of the structural formula (104).

5            25. The light emitting element according to any one of claims 1-3, 7-9, 13-15 and 19-21, wherein the inorganic compound is oxide of transition metal.

26. The light emitting element according to any one of claims 1-3, 7-9, 13-15 and 19-21, wherein the inorganic compound is one or more kinds of titanium oxide,  
10    vanadium oxide, molybdenum oxide, tungsten oxide, rhenium oxide, ruthenium oxide, chromium oxide, zirconium oxide, hafnium oxide, tantalum oxide and silver oxide.

27. A light emitting device comprising a light emitting element according to any one of claims 1-3, 7-9, 13-15 and 19-21.

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